(d) switching the first and second queries to at least first and second sources of stored data, respectively, the first and second sources comprising mirrored data; and

A6 (e) providing first and second output data at substantially a same time in response to the first and second queries, respectively, from the first and second sources, respectively to the first and second application processors.

Please delete Claim 2.

REMARKS

Claims 1 and 3-78 remain pending in this application for consideration. Claim 2 has been deleted.

The present invention is directed to a system and method for providing network processing and stored data access that is configured to be fully scalable and survivable. In one aspect of the present invention, at least two application processors are used to simultaneously process at least two user requests, respectively. That is, a first application processor processes a first user request and a second application processor processes a second user request. Each of the application processors applies substantially the same application at substantially the same time when processing the user requests. The two application processors are connected to a switch, which is in turn connected to a data storage device containing data associated with the application running on the application processors. The system is "scalable" in the sense that additional application processors running substantially the same application can be added as demand for the particular application increases. The system is "survivable" in the sense that, if one of the application processors fails, a user request can be routed to any of the other application processors.

In another aspect of the present invention, an application processor is connected to a switch, which is in turn connected to at least two data storage devices containing mirrored data. The two data storage devices provide output data to the application processor at substantially the same time. The system is "scalable" in the sense that additional data storage devices can be added as required. The system is "survivable" in the sense that, if one of the data storage devices fails, any of the other data storage devices can be used to route output data to the application processor.

Rejection Under 35 U.S.C. § 112

The Examiner rejected Claim 2 under 35 U.S.C. § 112, first paragraph, as containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. Claim 2 has been deleted from the application and, thus, this rejection is moot.

Rejections Under 35 U.S.C. § 102

The Examiner rejected Claims 1-3, 10-15, 19-27, 31-34, 36-39, 42-44, 46-60, 63-70, 73-75 and 77-78 under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,751,955 to Sonnier *et al.* ("Sonnier"). As shown in Fig. 1A, Sonnier discloses a multiprocessor system that includes at least two sub-processor systems (10A and 10B). Each sub-processor system includes a CPU (12A or 12B) connected to a variety of I/O devices (17) by a router (14A or 14B). The routers (14A and 14B) interconnect the sub-processor systems to each other, such that the CPU of one sub-processor system can communicate with the CPU and/or I/O devices of the other sub-processor system.

Sonnier discloses that the CPUs (12A and 12B) can operate in either simplex mode or duplex mode. *See* Sonnier col. 6, lns. 10-14. In simplex mode, the CPUs (12A and

12B) operate independently of each other and run different applications for processing different requests. *See* Sonnier col. 16, lns. 10-23. If one of the CPUs (12A or 12B) fails, the other CPU will run a back-up application (*i.e.*, an application that is different from that typically run on the CPU) and take over for the failed CPU. *See* Sonnier col. 91, lns. 41-56 and col. 93, lns. 4-26. This is a software fault-tolerance approach. By contrast, in duplex mode, both CPUs (12A and 12B) operate in a synchronized lock-step fashion, executing the same instructions at the same time to process the same user request for error-checking purposes. *See* Sonnier col. 16, lns. 24-37. If one of the CPUs (12A or 12B) fails, the other CPU will continue to execute the instruction. *Id.* This is a hardware fault-tolerance approach.

It should be noted that, regardless of whether the CPUs (12A and 12B) are operating in simplex mode or duplex mode, each CPU (12A and 12B) includes a pair of processor units (20a and 20b of Fig. 2) that always operate in duplex mode. *See* Sonnier col. 14, lns. 5-17. In other words, processor units (20a and 20b) operate in a synchronized lock-step fashion, receiving and executing identical instructions and issuing identical data and command outputs at the same time. *Id.*

Independent Claims 1, 19, 31, 48 and 54 of the present application (from which Claims 2-3, 10-15, 20-27, 32-34, 36-37, 49-53 and 55-58 depend) have been rewritten to clarify that the two application processors can be used to simultaneously process two different user requests, and, that the two processors apply substantially the same application at substantially the same time (*i.e.*, scalable and survivable). Support for this amendment is provided at pg. 5, ln. 19 to pg. 6, ln. 14 and pg. 8, lns. 20-25 of the present application. By contrast, Sonnier discloses CPUs (12A and 12B) that either run <u>different applications</u> at the same time to process different user requests (simplex mode) or the same application at the same time to process <u>the same user</u>

request for error-checking purposes (duplex mode). Whether operating in simplex mode or duplex mode, the Sonnier CPUs (12A and 12B) only address the problem of fault-tolerance or survivability. In fact, the Sonnier disclosure does not even attempt to address the need for scalability, a key aspect of the present invention. Thus, because Sonnier does not disclose CPUs that simultaneously process different user requests by applying substantially the same application at substantially the same time, the above-identified claims as amended are not anticipated by Sonnier.

Independent Claims 38, 44, 59, 65, 69 and 75 of the present application (from which Claims 39, 42-43, 46-47, 60, 63-64, 66-68, 70, 73-74 and 77-78 depend) include at least two data storage devices containing mirrored data that provide output data to the application processor at substantially the same time (*i.e.* scalable and survivable). By contrast, Sonnier merely discloses a variety of I/O devices (17), one of which may be a data storage device, that can be accessed by either of the CPUs (12A or 12B). Sonnier does not address the problem of survivability or scalability with respect to the I/O devices (17). Thus, because Sonnier does not disclose two data storage devices containing mirrored data that provide output data to a CPU at substantially the same time, the above-identified claims are not anticipated by Sonnier.

Rejections Under 35 U.S.C. § 103

The Examiner rejected Claims 4-9, 16 and 28 (which depend from independent Claims 1 and 19) under 35 U.S.C. § 103 as being unpatentable over Sonnier. The Examiner also rejected Claims 17-18, 29-30, 35, 40-41, 45, 61-62 and 71-72 (which depend from independent Claims 1, 19, 31, 38, 44, 59 and 69) under 35 U.S.C. § 103 as being unpatentable over Sonnier in view of U.S. Patent No. 4,914,570 to Peacock ("Peacock"). For the reasons stated above with

respect to independent Claims 1, 19, 31, 38 44, 59 and 69, these claims are distinguishable from Sonnier and/or Peacock.

Respectfully submitted,

By: Judith L. Carlson

Judith L. Carlson, Reg. No. 41,904
STINSON, MAG & FIZZELL, P.C.
1201 Walnut Street, Suite 2800
P.O. Box 419251
Kansas City, MO 64141-6251
Telephone: (816) 842-8600
Facsimile: (816) 691-3495
Attorney for Assignee

ATTACHMENT A

Marked-Up Claim Amendments

1. (Amended) A system for providing network processing and stored data access, the system comprising:

(a) at least first and second application processors operative to simultaneously process at least first and second user requests, respectively, each of the first and second processors applying substantially the same application at substantially the same time;

(b) a switch operatively connected to at least the first and second processors;

(c) a data storage device operatively connected to the switch; and

(d) wherein data stored in the data storage device is associated with the application[; and

(e) wherein at least the first and second processors operate at substantially the same time].

19. (Amended) A system for providing network processing and stored data access, the system comprising:

(a) at least first and second sets of front end processors, each of the sets comprising at least two front end processors operative to simultaneously process at least two user requests, respectively, each of the two front end processors applying substantially the same application at substantially the same time;

(b) at least first and second switches, each switch operatively connected to each of the front end processors in each of the sets;

(c) at least two data storage servers operatively connected to each of the first and second switches; and

(d) wherein data stored in the data storage devices is associated with the application of at least one set of front end processors[; and

(e) wherein the at least two front end processors of at least one set operates at substantially the same time].

31. (Amended) A method for providing network processing and stored data access, the method comprising the steps of:

(a) applying [an] substantially the same application on each of at least first and second application processors at substantially the same time;

(b) inputting a plurality of data requests associated with the application, a first and second data request input into the first and second application processors, respectively;

(c) generating in response to the first and second data request first and second queries, respectively, with the first and second application processors, respectively; and

(d) switching the first and second queries to a data storage device operatively connected to each of the first and second application processors.

48. (Amended) A system for providing network processing and stored data access, the system comprising:

(a) at least first and second application processors [applying an application] operative to simultaneously process at least first and second user requests, respectively, each of the first

and second application processors applying substantially the same application at substantially the same time;

(b) a load balancer operatively connected to the first and second application processors;

(c) a switch operatively connected to the first and second application processors;

(d) at least first and second sources of stored data operatively connected to the switch, the first and second source comprising mirrored data; and

(e) wherein the first and second source of stored data provide output data at substantially a same time to [the first application processor] the first and second application processors for the application.

54. (Amended) A method for providing network processing and stored data access, the method comprising the steps of:

(a) load balancing at least first and second user requests between at least first and second application processors, respectively;

(b) applying [an] substantially the same application in response to each of the first and second requests with the first and second application processors;

(c) generating first and second queries for stored data in response to applying the application to the first and second requests, respectively;

(d) switching the first and second queries to at least first and second sources of stored data, respectively, the first and second sources comprising mirrored data; and

(e) providing first and second output data at substantially a same time in response to the first and second queries, respectively, from the first and second sources, respectively to [at least the first application processor] the first and second application processors.